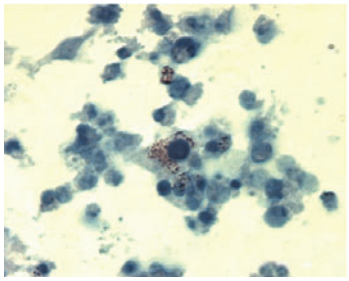
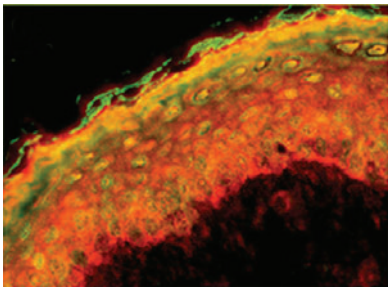
PPARs Increase Human Sebum



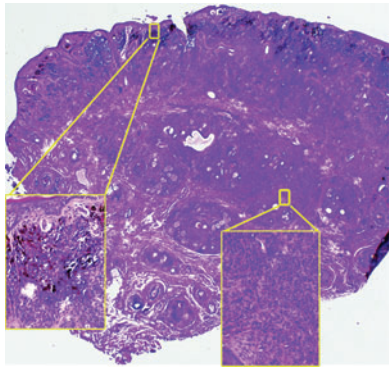
Peroxisome proliferator-activated receptors (PPARs) are nuclear hormone receptors that regulate a variety of genes, including those involved in lipid metabolism in skin. After treating SEB-1 sebocytes with PPAR ligands and isotretinoin, Trivedi and colleagues investigated the contribution of each receptor subtype to sebum production. Isotretinoin significantly decreased lipogenesis, whereas a number of PPAR agonists increased lipogenesis. Patients treated with thiazolidinediones or fibrates had significant increases in sebum production as compared with age-, disease-, and sex-matched controls. These data indicate that PPARs play a role in regulating sebum production. Modulating their activity may be a novel therapeutic strategy to treat acne. *See page 2002*

Moonlighting Enzyme



hRoDH-E2 is a cytoplasmic NAD(P)(H)-dependent enzyme that metabolizes hydroxysteroids and retinoids and may function as a transcriptional repressor. Markova and co-workers used the promoter of profilaggrin and show that hRoDH-E2 could directly link intracellular cytoplasmic and nuclear functions. This intriguing observation suggests that the effect of the protein on cell homeostasis may result from these two functions. Questions regarding hRoDH-E2's dual functions, its partners, and the targets of interactions still need to be answered. *See page 2019*

BRAF Mutations in Congenital Nevi



Ichii-Nakato and colleagues examined the $BRAF^{V600E}$ mutation to investigate whether melanocytic nevi are associated with sun exposure patterns. They detected the mutation in 105 of 120 (87.5%) acquired nevi and 43 of 62 (69.4%) congenital nevi. As the mutation was found in 81.4% of acquired nevi excised from palms, soles, and genitalia, they conclude that UV light is not required for acquisition of the mutation, and the non-mutagenic effects of UV light on melanocytes may be more important in nevogenesis. Their findings also suggest a different pathogenesis of medium-sized congenital nevi versus acquired nevi and small congenital nevi. *See page 2111*

PTHrP and Angiogenesis

Diamond and colleagues evaluated mouse lines harboring targeted deletions of both parathyroid hormone (PTH)-related protein (PTHrP) and the PTH/PTHrP receptor (PPR), along with hair follicle studies on K14-PTHrP mice, to define the function of the PTHrP–PPR signaling system in skin. At the late anagen stage, PTHrP overexpression attracted less vasculature to the hair follicle, produced shorter hair shafts, and led to thinner hair follicles and shafts. The findings suggest that antagonists and agonists to the PPR may be potential therapeutics for adult hair cycle disorders or other skin diseases with angiogenesis-dependent components. *See page 2127*

Laser Wake-Up Call for Melanoblasts

Treatment of vitiligo requires the upward migration of melanoblasts (MBs) to the epidermis followed by the functional development of MBs to produce melanin. Lan and co-workers have shown that helium-neon (He-Ne) laser irradiation imparts different physiologic effects on MBs at different maturation stages *in vitro*. They also provide an explanation for the He-Ne laser's effect on vitiligo skin *in vivo*: the laser induces repigmentation via its simultaneous effects on immature and more differentiated MBs. These findings provide a theoretical basis for using He-Ne laser to treat diseases that may require modulation of cellular physiologic functions. *See page 2119*

Journal of Investigative Dermatology (2006) **126**, 1925. doi:10.1038/sj.jid.5700496